Isotretinoin’s Mechanism of Action Explored

BY KERRI WACHTER

PHILADELPHIA — Isotretinoin appears to derive its effectiveness from increased production of the antimicrobial protein neutrophil-gelatinase-associated lipocalin in the skin, reducing sebum levels and Propionibacterium acnes, according to new data.

While isotretinoin is the most effective agent for patients with moderate to severe acne, the drug’s teratogenicity makes alternative therapies desirable. A better understanding of the drug’s mechanism of action could direct the investigation of new therapies, Kimberly Lumsden, an MD/PhD student at Pennsylvania State University, Hershey, said at the annual meeting of the Society for Pediatric Dermatology.

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She said that neutrophil-gelatinase-associated lipocalin (NGAL) levels are highest 1 week after the start of isotretinoin treatment. In addition, the study showed that in vivo sebum and P. acnes levels start to decrease during the first week of treatment with isotretinoin and continue to decrease for up to 8 weeks.

Dr. Lumsden and her colleagues recruited a patient on isotretinoin and evaluated the levels of NGAL present on the skin using a tape-stripping method at weeks 1, 4, and 8.

At 1 week we saw the greatest increase in the level of NGAL, which levels off at 4-8 weeks,” she said.

However, sebum levels start to recover by about 8 weeks. As for P. acnes, there was a trend toward decreased levels at week 1 and levels continued to decrease through weeks 4 and 8.

Consider Nevus Simplex in Atypical Sites

PHILADELPHIA — Infants with at least one typical site of nevus simplex involvement are likely to have involvement in less typical sites as well, according to a retrospective study of 28 infants.

Nevus simplex—the most common birthmark of infancy—typically affects the forehead, glabella, upper eyelids, and nape.

Among the patients in this study, approximately two-thirds had scalp involvement (69%), 64% had nose involvement, 64% had upper- or lower-lip involvement, and more than half (54%) had lumbosacral involvement, reported Dr. Anna Juern and colleagues in a poster at the annual meeting of the Society for Pediatric Dermatology.

For the study, the researchers identified 28 infants with nevus simplex who were seen at two tertiary care centers. The infants (15 girls and 13 boys) had a median age of 4.5 months. The infants also had at least one typical site of involvement, noted Dr. Juern, a pediatric dermatology research fellow at the Medical College of Wisconsin in Milwaukee.

“Using the name ‘nevus simplex’ to describe these [atypical] lesions will aid in the correct diagnosis of these lesions and provide reassurance to parents, due to their benign nature,” the researchers concluded.

—Kerr Wachter